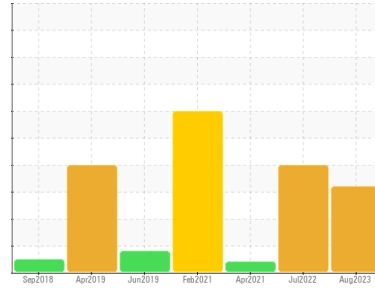




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
801187

Component
Diesel Engine

Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated.

Contamination

There is a moderate amount of fuel present in the oil. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable as a result of the abnormal and/or severe wear. The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORMATION

method	limit/base	current	history1	history2	
Sample Number	Client Info	GFL0084362	GFL0052664	GFL0022173	
Sample Date	Client Info	29 Aug 2023	12 Jul 2022	29 Apr 2021	
Machine Age	kms	Client Info	272163	17709	16096
Oil Age	kms	Client Info	0	462	536
Oil Changed	Client Info	Changed	Changed	Changed	
Sample Status		ABNORMAL	SEVERE	ABNORMAL	

WEAR METALS

method	limit/base	current	history1	history2	
PQ	ASTM D8184*	0	0	---	
Iron	ppm	ASTM D5185(m) >100	▲ 135	▲ 133	20
Chromium	ppm	ASTM D5185(m) >20	3	2	<1
Nickel	ppm	ASTM D5185(m) >4	<1	1	<1
Titanium	ppm	ASTM D5185(m)	<1	<1	0
Silver	ppm	ASTM D5185(m) >3	0	0	<1
Aluminum	ppm	ASTM D5185(m) >20	7	4	2
Lead	ppm	ASTM D5185(m) >40	13	9	5
Copper	ppm	ASTM D5185(m) >330	6	10	5
Tin	ppm	ASTM D5185(m) >15	1	1	<1
Antimony	ppm	ASTM D5185(m)	0	0	0
Vanadium	ppm	ASTM D5185(m)	0	0	0
Beryllium	ppm	ASTM D5185(m)	0	0	0
Cadmium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m) 0	2	2	2
Barium	ppm	ASTM D5185(m) 0	0	0	0
Molybdenum	ppm	ASTM D5185(m) 60	61	79	68
Manganese	ppm	ASTM D5185(m) 0	1	1	<1
Magnesium	ppm	ASTM D5185(m) 1010	889	934	972
Calcium	ppm	ASTM D5185(m) 1070	961	1073	1076
Phosphorus	ppm	ASTM D5185(m) 1150	945	918	993
Zinc	ppm	ASTM D5185(m) 1270	1114	1194	1262
Sulfur	ppm	ASTM D5185(m) 2060	2093	2417	2557
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >25	6	6	5
Sodium	ppm	ASTM D5185(m)	▲ 204	▲ 553	287
Potassium	ppm	ASTM D5185(m) >20	6	31	43
Fuel	%	ASTM D7593* >2.0	▲ 2.7	1.6	1.4
Glycol	%	ASTM D7922*	0.0	0.0	0.0

INFRA-RED

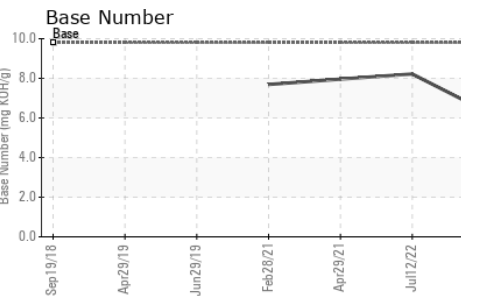
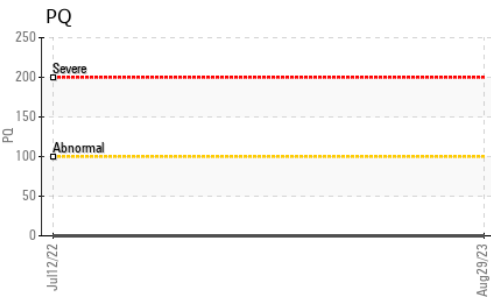
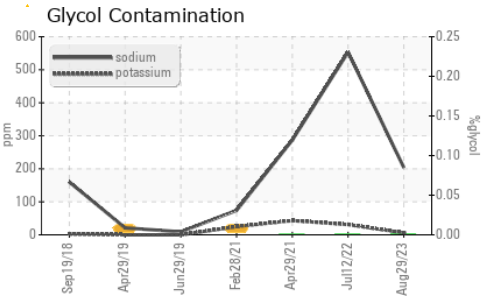
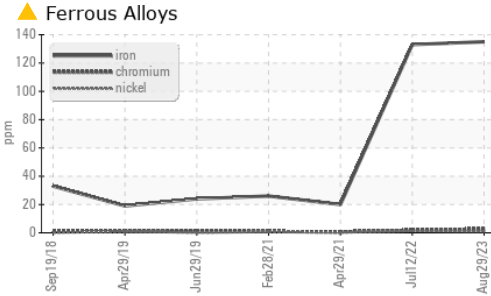
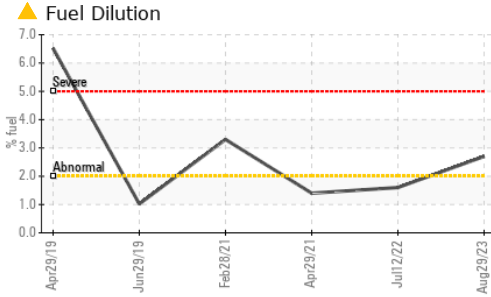
method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844* >3	2.4	5.8	0.1
Nitration	Abs/cm	ASTM D7624* >20	12.3	14.4	9.4
Sulfation	Abs/.1mm	ASTM D7415* >30	28.3	36.4	21.2

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	ASTM D7414* >25	20.9	19.3	17.6
Base Number (BN)	mg KOH/g	ASTM D2896* 9.8	6.37	8.22	7.96



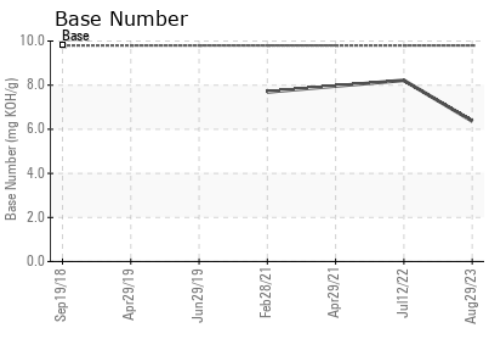
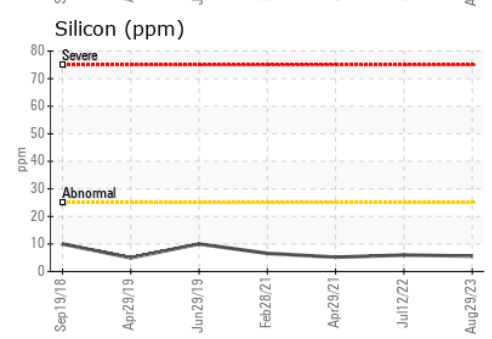
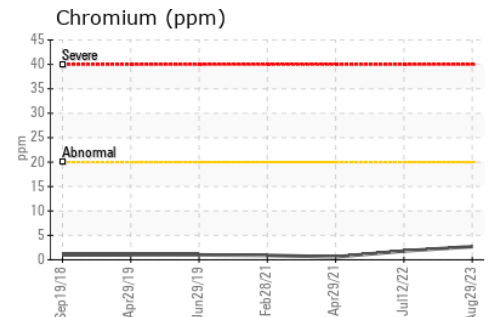
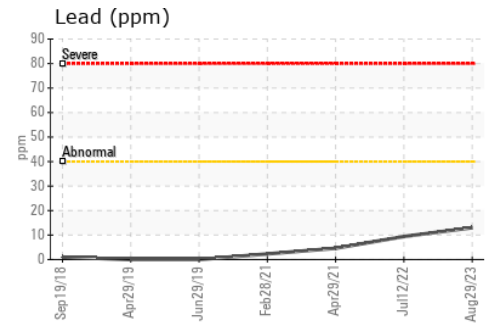
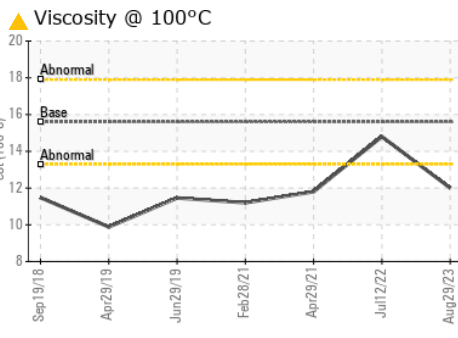
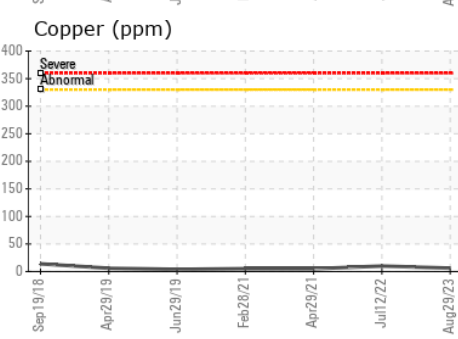
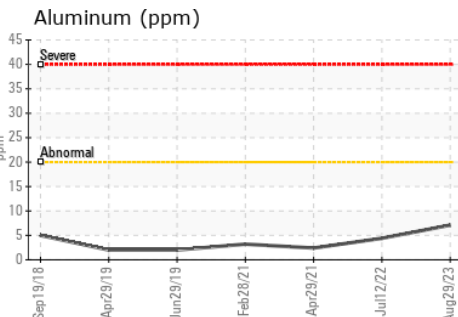
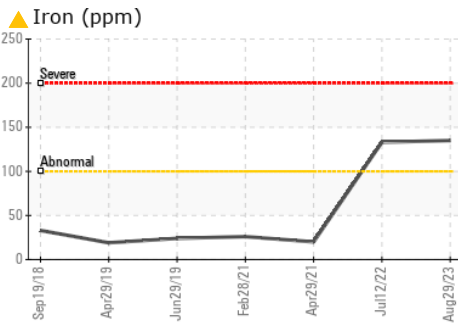
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	▲ 12.0	14.8

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County
Sample No. : GFL0084362 **Received** : 08 Sep 2023
Lab Number : 02581112 **Diagnosed** : 11 Sep 2023
Unique Number : 5642177 **Diagnostician** : Kevin Marson
Test Package : MOB 2 (Additional Tests: FuelDilution, Glycol, PercentFuel, PQ)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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